

CACTUS AND SUCCULENT JOURNAL

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No. 12



*James West somewhere in
South America.*



CACTUS AND SUCCULENT JOURNAL

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A Botanical Trip from Pretoria through Swaziland, Zululand and Parts of Natal.....	Mr. R. A. Dyer	199
Distribution of Cacti in Cuba.....	Mr. J. P. Carabia	202
Latin Plant Names.....	Dr. Ira L. Wiggins and Dr. R. W. Poindexter	205
Ants, Cacti, Beef.....	Dr. Leonel G. Dodds	207
<i>Pachyphytum viride</i> , A New Species.....	Mr. Eric Walther	210
<i>Euphorbia lactea</i> in Florida.....	Mr. J. D. Mitchell	212
Vagabonding in Lower California, Mexico.....	Dr. Robert T. Craig	214
The Tribulations of an Indiana Collector.....	Mr. Arthur E. Adler	218

CACTUS AND SUCCULENT SOCIETY MEETINGS

Sunday, July 4th, 11.00 a. m.

Knickerbocker Nursery (Mrs. Bakkers), 6065 Bach St., Market Street Extension, San Diego, Calif. Picnic lunch in the out door living room. Our Hostess will provide punch and ice cream. Other places of interest that may be visited on this trip are:

McCabe Cactus Gardens, 6721 Imperial Ave., San Diego.

Constance Bower's Nursery, 2412 L. St., San Diego.

La Estrella Nursery, 3613 41st St., San Diego.

Cactus and Succulent Gardens, Balboa Park, San Diego.

Soledad Gardens, Alta Vista St., Pacific Beach, Calif.

September 4, 5 and 6

Labor Day field camping trip into Lower California, Mexico.

September 17 to October 3

Annual Cactus & Succulent Show at Los Angeles County Fair, Pomona.

EDITOR'S NOTE

Britton and Rose reprinting is off the press and all shipments will be made before leaving for the East on June 26th. While taking a two months leave your Editor has planned two illustrated issues and with Mr. Baxter's assist-

ance these next two Journals should meet with your approval. Say a good work for Britton and Rose and continue to send in articles so that this work may continue. The August issue will contain information for you to send your volume VIII for binding. Will see you in September!

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Astrophytum capricornis var. *minor*

A Botanical Trip From Pretoria Through Swaziland, Zululand and Parts of Natal

By R. A. DYER

In last month's number I intimated that I would write up an account of a recent botanical collecting expedition in which succulents played an important part. This trip from Pretoria in the Transvaal eastwards to Swaziland and thence to Zululand on northern Natal was made in very congenial company. Mr. G. W. Reynolds, who is fast becoming as world famous for his work on *Aloe* as Messrs. Alain White and Boyd L. Sloane are in the field of the *Stapelias*, was the prime mover and planned the route in such a way that we missed few, if any, *Aloes* and at the same time saw many other succulents, particularly *Euphorbias* growing in their native habitat. Miss J. C. Verdoorn, botanist, who has given Messrs. White and Sloane much valuable assistance, was the third member of the party, and although three in number, it was always a happy and industrious party. For the convenience of readers and to make the account more

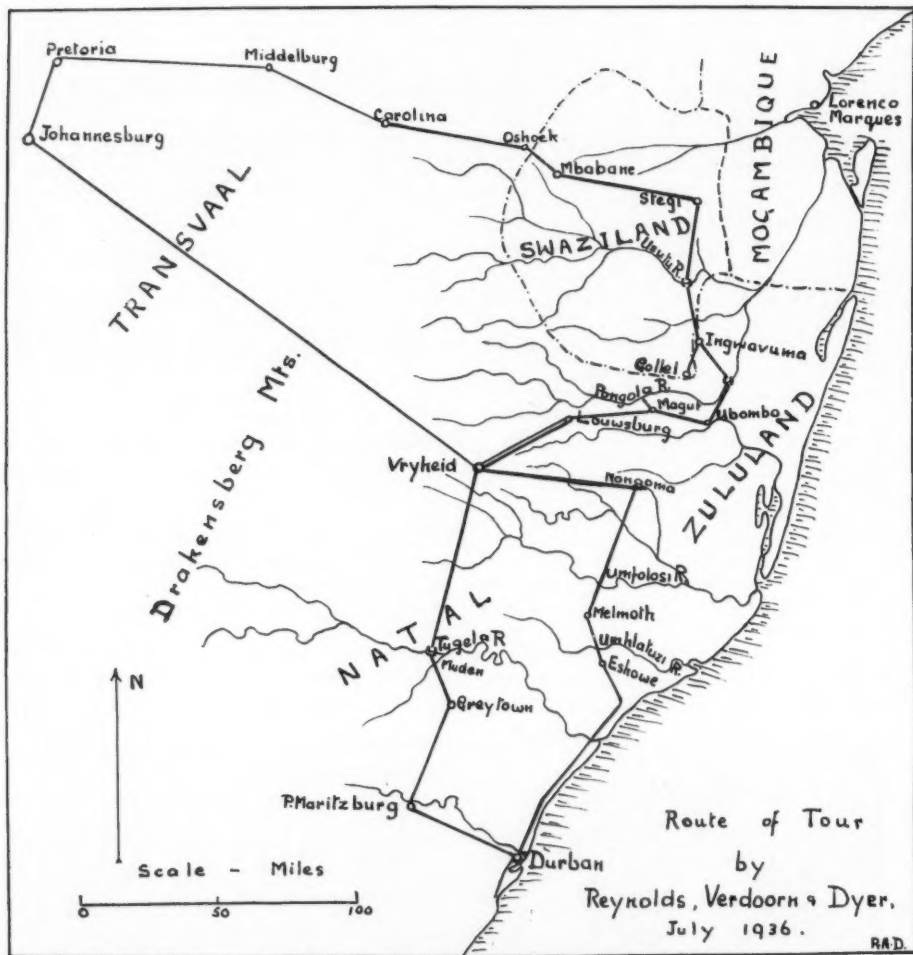
intelligible I am including a very rough map showing our route.

We left Pretoria at 12 noon on Saturday, 18th, July last, in Mr. Reynold's car laden with all manner of botanical equipment, including plant presses, collecting tools and cameras. Our object was to get as far as possible the first day, but mere mileage figures might give readers the impression that we had hastened slowly. Taking into consideration the state of the roads, however, we did well to reach Mbabane in Swaziland for dinner, a distance of roughly 230 miles. So far the trip had been fairly uneventful as regards our observations on succulents, but we had great expectations for the morrow.

Leaving Mbabane after an early breakfast our progress was arrested almost immediately by the discovery of a few fine specimens of the little known *Aloe suprafoliata*. The type specimen of this fascinating species was a comparatively



To introduce Mr. G. W. Reynolds and Miss I. C. Verdoorn as we cross the Pongola river on a pont.

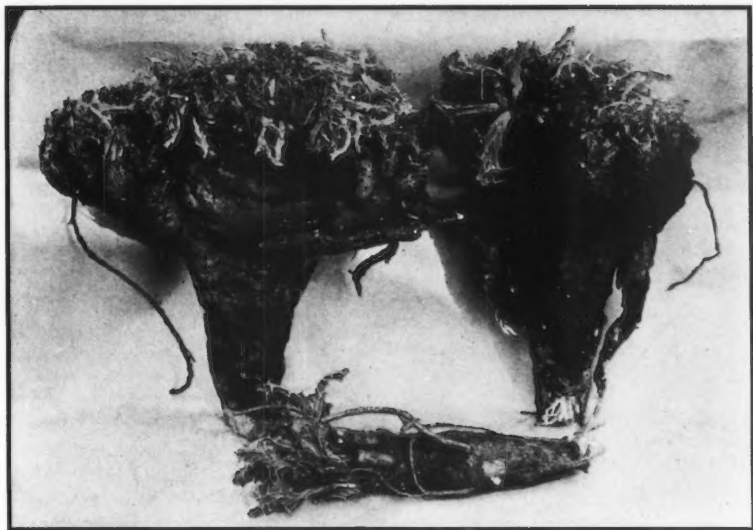


young plant with the leaves close pressed, one above the other, in two opposite series. This condition gives way on maturity to the characteristic spiral arrangement common to the majority of Aloes. If, however, a mature plant falls on hard times, so to speak, that is, if it is left on a rocky outcrop without much foothold on the soil, it may revert to its juvenile appearance. In the rock crevices associated with *Aloe suprafoliata* we found a fair quantity of *Crassula argyrophylla*.

Not many miles farther on plants of that stately species *Aloe marlothii* were seen standing out like sentinels on the hillside and later in denser masses like an army. This species which

develops a straight stem up to 10 ft., or on rare occasions even up to 16 ft., has a wide range of distribution in the Transvaal and extends into Swaziland Zululand and northern Natal. Only a single inflorescence is produced from the crown of leaves of each plant, but this may be composed of over 30 dense racemes of brilliant yellow-purple flowers.

Associated with *A. marlothii* in one area, we made our first acquaintance on this trip with a member of the very complex "maculate" group of *A. saponaria* affinity. As with many species in this group, considerable variation was observed both in the size of the leaf-rosette, and in the colour and shape of the inflorescence. The



Euphorbia clavigera N. E. Brown from Swaziland.
Previously imperfectly known.

colour of the flowers varied from orange to bright red and for the most part the inflorescence was subcapitate.

So far we had been travelling over Transvaal and Swaziland temperate grasslands or "highveld" where succulents are found usually only sparingly on rocky hillsides or "koppies." Now we began descending into the hot valley of the Komati River or "lowveld" country where trees become prominent in taller and often coarse grassveld, giving a fairly dense parkland effect. Suddenly Mr. Reynolds pulled the car up with a jerk and we all tumbled out to examine a fine clump of *Aloe cooperi* half hidden amongst grass under a small *Acacia* tree. It was an unusually dry habitat for this species and a useful record. But, for me, there was in the same place an even more thrilling discovery—*Euphorbia clavigera*.

When Brown described *E. clavigera* for the first time in *FLORA CAPENSIS*, Vol. 5, pt. 2, p. 362, the only material he had was a few branches with male "cyathia"—groups of flowers surrounded by an involucre with glands. From this meagre representation Brown had to fill in as many of the gaps as possible, something like an anthropologist has to do when describing incomplete fossils of prehistoric animals. For the

most part Brown's assumptions were good, but it is now possible to fill in a few more details. The plant develops a very large tuberous tap root from the top of which a number of short stem-like branches arise. These stem branches are round and unarmed and from the apex of each is produced a few spinescent, three angled, often somewhat clavate, branches. These branches bear both male and bisexual cyathia and die back at the end of each season.

It was one thing discovering *Euphorbia clavigera*, a photo of which is reproduced, but quite another to dig out specimens for cultivation. By the use of a large pick and by expending much energy, two or three good plants were secured for the bag, or rather box, which we carried on the back of the car.

Later we noted *Cissas quadrangularis* climbing over trees, and on a "krantz" or cliff we had our first glimpse of the tall *Aloe nitens* and found plants of a species of *Cotyledon* which we were unable to identify. This was sufficient reward for one day and we were content to drive slowly through fields of another "maculate" *Aloe* without getting out of the car, but only because of the knowledge that it would be encountered again after leaving Stegi, which we made our base for the second night.

(To be continued)



Distribution of Cacti in Cuba

By J. P. CARABIA

INTRODUCTION

On June 22 of 1936, the writer left Santiago de Cuba, together with Professor Darlington of Harvard University, Dr. Acuña, Chief of the Botanical Department of the Cuban Agronomic Station, and Mr. Bucher, also a botanist.

After a twenty hour journey we arrived at El Dian, exactly the spot where, many years ago, according to Phillip J. Simout, Captain Rowan landed, bearing the famous "Message to Garcia," which had been entrusted to him by President McKinley, during the Spanish-American War. That place was our starting point, and for those who wish to climb up Pico Turquino. Not very far away we could see one of the Spanish battle ships, sunken by the U. S. Navy during the Santiago battle.

We returned to Santiago after 39 days of exploration, from where we sailed to Baracoa,

making several inland trips to study the coast from Maisí to Guantánamo, back again to Santiago, then to Berraco, and finally to Holguín and Gibara, where, after four months, our exploration trip ended.

This trip was full of excitement and very interesting as we were able to appreciate and study the different zones of vegetation of this wonderful province, admiring the beautiful vistas from the mountains to the coast. This place is the cradle of the Cuban Indians called Siboneyes and Tainos; every where are found traces of their civilization, such as pans, hatchets, necklaces, vases, idols and more than that. Inheritance is very peculiar to the people that inhabit this territory.

This part of the country, owing to the lack of communication, is full of traditions and legends that were handed down to us from the old Spanish days.

CLIMATE

Annual temperature in Oriente is about 80°F. It is warmer on the coast and cooler in the mountains, especially at night, as we observe 11°C. in August. Rainfall is moderate in the interior, and is heaviest on the north slopes of the Sierra Maestra, where the annual precipitation is more than 100 inches and along the coast is about 24 inches, in some places. May to October is the rainy season.

VEGETATION

Vegetation is lower on the south side of the main divide, but there is usually a sufficient amount to make cross-country travel extremely difficult. The high mountains are usually enveloped in clouds, even in the dry season, and there are large tree ferns, mosses, orchids, lycopodiums, piperaceae and many other plants of cool high places; among this vegetation four cacti were collected, in rocky slopes at the altitude of about 1000 meters.

On the coast, limestone plains and terraces, with thin soil and underground drainage, (especially when located south of the divide), support a semi-arid type of vegetation, with a number of species of *Yacquinia*, *Solanum*, *Croton*, *Euphorbia*, *Agave*, together with many other thorny shrubs. Among that vegetation were several species of Cacti.

GEOLOGY

In the rough mountain land, extending specially on the southern and eastern coasts, two ranges may be distinguished, with Pico Turquino 2000 meters high as the highest peak. This range of mountains have the typical geological formation of igneous rocks on the high places, the foot-hills being composed of serpentine and limestone slopes all around, making continuous terraces on the south coast and broken on the north. The largest display of terraces is found in Punta de Maisí and Cabo Cruz, from Ensenada de Mora to Santiago. Large rocky beaches are found along this shore. Plains of silicious sand are found in Cajobabo, Maisí Sabana la Mar and Imias, where the vegetation and aridity of the zone are so conspicuous as to make Brother León exclaim. It reminded him of the big mesetas of Mexico with the desert flora.

PLANT DISTRIBUTION

Melocactus (cactus)—Two species are described from Oriente; *M. acuñaí* and *M. barlowii*, the last of which was collected by Britton and Shafer in Ensenada de Mora and Guantánamo in different trips. The large colony we found in "El Dian" beach among rocks, about 20 meters from the shore, and also on the river cliffs in the shade of big trees. Here the Melo-

cactus grow with more vivid colors, forming large colonies, as well as near the bay of Santiago. From this last town to Berraco, not many plants were found. From Guantánamo to Sabana la Mar some were seen here and there, with appreciable variation in the last place. *M. acuñaí* has been collected from Maisí to Imias, but the largest colony of *M. acuñaí*, where undoubtedly the *M. barlowii* may be found too, and an intermediate species is probable to be among them. Unfortunately, Britton never visited this cactus region situated between Maisí and Imias, where cacti are more abundant than anywhere else in Cuba.

Opuntia—Discussion about *O. dillenii*, *O. cubensis* and *O. militaris* is not the question here. Both forms of *O. dillenii* are found in both coasts and inland too. *O. militaris* was only collected in the east side of Guantánamo bay; this little *Opuntia* is near Maisí too, but not in so large quantities as in Guantánamo. *Opuntia tunicata* was collected in Imias; it grows only there, making beautiful yellow spots.

Opuntia macracantha grows on the north and south coast, from Manatí to Gibara and from Maisí to Ensenada de Mora, but it is more abundant in Maisí, Santiago to Berraco and Guantánamo; from Santiago to Ensenada de Mora it is rare.

An interesting *Opuntia* related to *O. macracantha* was collected in "El Cobre" hill.

Leptocereus—*L. sylvestris* has a very small geographic distribution in Ensenada de Mora where it was collected by Britton many years ago. Of *Leptocereus maxoni*, only three small groups are known: in Maisí, Rio Ovando, and in Berraco.

Two very interesting *Leptocereus* have been collected, one from the north, and the other from the south coast.

Cephalocereus vs. *Lemaireocereus*—*C. brooksianus* give us a good demonstration in ecological variations, from semi-prostrate plants to erect ones, round to conic cephalia and a wide variation in ribs. It grows on both coasts, north and south, with intensity from Ensenada de Mora to Guantánamo.

Lemaireocereus bystris is found in all its splendor in large areas in Maisí, and from there to Guantánamo and Santiago de Cuba. From this last place to the west it is not very common, unlike the *C. brooksianus*, which is not peculiar in Maisí.

During our trip we were able to collect three *Cephalocereus* having a very marked difference from *Cephalocereus brooksianus*, one from the north coast and the other from the south.

Pereskia cubensis—Only few plants were seen, one in Berraco, and many of them in Guantánamo. A few plants may be seen in Ensenada de Mora.

Dendrocereus nudiflorus—Some plants were seen in Daiquirí and Guantánamo. On the north coast, in Gibara and Puerto Padre, it is very scarce.

Coryphantha cubensis—It has a limited and small area in the serpentine sabana of Holguín. Mrs. Emma Cabrera de G. Lanier is writing an article about this interesting plant.

Neomammillaria—Large colonies of *N. proliferata* were found between Jauco Abajo, Cajobabo and Imías, especially in the Chibera, close to this last town, growing under a vegetation of shrubs. It is also found near Guantánamo.

Harrisia—Two species are described by Britton from Oriente: *H. fernowii* and *H. taylori*, from Rio Grande and Rio Uvero on the south coast, but as the genus is so distributed in the north and in the south coast, where this plant is so abundant that it gave us the opportunity to collect about 8 very interesting specimens.

Selenicereus—Only one species was determined by Britton from this province, *S. urbanianus*; beside *S. grandiflorus*, which is found everywhere. We have collected much material of this genus, and hope to have more new species from this province; this material is now in bloom.

Rhipsalis cassutha—Collected in rock cliff in Pico Turquino at 1200 meters high; it is everywhere on rocks or hanging from palm leaves.

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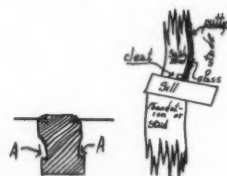
YOUR GLASS CASTLE

By RAY A. KEEN, Topeka, Kansas

Before even thinking very seriously about your glass castle you should visit your nearest greenhouse and really give it a thorough examination. Note the pitch of the roof—it must be steep enough that the wind can't blow the rain up between the glass. The glass size is also important, most greenhouse glass is 16 feet wide. Greenhouse glass is a poor grade of glass and is much cheaper than window glass. Ask for it when pricing glass. The rafter shape is import-

ant also, the groove ("A" in Fig. 1) is quite necessary to carry any water that seeps in on down the rafter so it doesn't drip inside. The rabbet is also filled with putty before the glass is set so the glass is supported its full length. This also makes it easier to replace any broken glass; may you have few of them!

Note especially how the break between the roof and the sidewall is handled; much loss of



heat and grief of all kinds is your lot if this is done wrong. Ventilation is also a very important point. It is very necessary to have a ventilator in the highest part of the building.

Heating is another all important thing to consider. If your "castle" is in the form of a "lean to" on the side of the house it would be best to connect to the house heating plant if possible. Excellent results are obtained with a common stove. However, it should be large enough to hold fire and tight enough not to smoke or allow fumes to escape. Important also is the kind of wood you use for holding your glass, for upon this one thing more than any other, depends the life of your "glass castle"; redwood and cypress are generally considered the best. Good paint contributes to longer life regardless of the wood and improves the looks. Most greenhouse men prefer a good outside aluminum paint because it resists water better and is easier to paint over when necessary.

Another point that often gives trouble is the break between the glass and the wall. Figure 2 shows one common way of handling this problem. The object of the slanting sill is to make all water run outside. The small cleat is put in after the glass is set and should be a half inch short so the water that condenses inside can run under the glass at each end. There are many problems you will have to meet and conquer that perhaps no one else would encounter. May your "glass castle" soon become more than an "air castle."

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Latin Plant Names

By DR. IRA L. WIGGINS AND DR. R. W. POINDEXTER

Once our natural antipathy toward anything so abstruse breaks down, we realize that there is a reasonable system underlying botanical nomenclature. It can actually become interesting to seek out the hidden meanings of these bizarre words and see how well they apply to the plants. This indoor sport is simplified by understanding some of the rules of the game and the accurate writing of labels is made easier.

Like people, plants are given first and last names, but the order is reversed. The name of the group to which the plant belongs is written first and begins with a capital. Such a group is called a *genus* (plural, *genera*, adjective form, *generic*). The name setting apart one particular plant is written second and begins with a lower case letter unless the plant has been named for a person or another genus (e.g., *Brassica Napus*), in which case the second or specific name must also begin with a capital. This point has been definitely settled by the International Botanical Congresses. In accurate writing, a botanical name should be followed by the name, or an abbreviation thereof, of the author who first published the name in question. Thus *Epiphyllum oxypetalum* Haw. means the description was originally written by A. H. Haworth. If a plant name is repeated in an article, the author's name need not be repeated after the first mention, unless it is necessary to do so to avoid ambiguity. One particular kind of plant is called a *species*. The plural of this word is *species*; derived adjective, *specific*.

Generic names are Latin nouns, though frequently derived from Greek or from modern languages. They may be—

1. Local names of plants in the language of the natives.
Example: *Aloe*, the Arabic name for this plant.
2. Descriptive names.
Example: *Mammillaria*, the nipple plant.
3. Personal names.
Example: *Carnegiea*, Carnegie's plant.
4. Fanciful or artificial names.
Example: *Lobivia*, a rearrangement of the letters of the word *Bolivia*.

Generic names may be masculine, feminine, or neuter. Personal generic names are usually feminine. Examples:

Cereus; masculine, a wax torch.

Carnegiea; feminine, a personal name.

Gymnocalycium; neuter, the naked bud plant.

Generic names ending in *us* are masculine, except names of trees, which are feminine; e.g., *Quercus* (oak), *Prunus* (plum), etc. Generic names ending in *a* are feminine. Generic names ending in *um* are neuter. The gender of generic names derived from Greek usually follow rules of Greek grammar.

These are the endings most frequently used, though there are others and of these the gender may be discovered by comparing the specific names used with them. If they are descriptive, they must agree in gender with the generic name.

Examples:

Cereus hexagonus; masculine, the hexagonal *Cereus*.

Mammillaria densispina; feminine, the densely spined *Mammillaria*.

Gymnocalycium multiflorum; neuter, the many-flowered *Gymnocalycium*.

The above examples follow the most frequently used conjugation of adjectives, having the endings indicated by underlining. Another conjugation frequently met with has the endings indicated below:

Cephalocereus senilis; masculine, the senile *Cephalocereus*.

Lobivia grandis; feminine, the large *Lobivia*.

Glottiphyllum linguiforme; neuter, the tongue-shaped *Glottiphyllum*.

Adjectives ending in *ns* keep the same ending for all three genders. Examples:

Echinocereus procumbens; masculine, the lying-flat *Echinocereus*.

Nopalea decumbens; feminine, the drooping *Nopalea*.

Gymnocalycium nidulans; neuter, the nest-ing *Gymnocalycium*.

If specific names are personal, they indicate that the plant was named in honor of some person, frequently the discoverer, but often someone else. If a personal specific name is derived from a man's name, it is formed directly from his actual name by adding one or the other of two very different endings. Which particular ending shall be used is purely a matter of choice with the author.

1. By adding *ii* to form the Latin possessive.
Example: *Ferocactus Johnsonii*; Johnson's *Ferocactus*.

Exceptions:

- (a) If the personal name ends in *er*, only one *i* is added; e.g., *Lithops Fulleri*, Fuller's lithops.
- (b) If the personal name ends in any vowel or in *y*, only one *i* is added; e.g., *Opuntia Vaseyi*, Vasey's *Opuntia*.

All names ending in *i* or *ii* are masculine. They agree in gender with the *man* and not with the specific name of the plant.

2. By adding *ianus*; masculine, *iana*, feminine, or *ianum*, neuter, to the actual name of the man. The ending is now inflected to agree with the gender of the generic name.

Examples:

Cephalocereus Smithianus; masculine, Smith's *Cephalocereus*.
Euphorbia Frickiana; feminine, Frick's *Euphorbia*.
Gymnocalycium Quehlianum; neuter, Quehl's *Gymnocalycium*.

If a personal descriptive name is derived from the name of a woman, it is formed by adding *ae* or *iae* to the woman's name to form the Latin feminine possessive and is *not* inflected to agree with the gender of the generic name. Examples:

Aloe (feminine) *Helenae* (feminine); Helen's *Aloe*.

Selenicereus (masculine) *Macdonaldiae* (feminine); Miss Macdonald's *Selenicereus*.

A special class of descriptive specific names derives from the name of the place where the plant was found. These are written without capitalization. They are formed in a number of ways of which the most common are:

1. Dropping the final syllable of the place name and adding—
(a) *ensis* if the specific name is either masculine or feminine.

Example: *Homocephala texensis*; feminine, the Texas *Homocephala* (human head plant).

- (b) *ense* if the specific name is neuter.
Example: *Epiphyllum guatemalense*; the Guatemala *Epiphyllum*.

This ending is therefore inflected in the regular way for adjectives ending in *is*.

2. Dropping the final syllable and adding *icus* (masculine), *ica* (feminine), or *icum*

(neuter), to agree with the gender of the name. Examples:

Echinocereus arizonicus (masculine); the *Echinocereus* of Arizona.

Wittia amazonica (feminine), the *Wittia* of the Amazon.

The ending *ioides* means resembling, and remains uninflected. Example: *Euphorbia stapelioides*, the *Euphorbia* which is like a *Stapelia*. There are other special endings, but those given should cover well over 90% of all botanical names and it is surprising how little practice it takes to get the hang of the thing.

The change in labeling which is most often encountered is that which occurs when a plant has been transferred to another genus changed to agree with the new generic name. Thus *Cereus giganteus* became *Carnegiea gigantea*.

ALBERT W. WILSON

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<i>Kalanchoe pilosa</i>35
<i>Malacocarpus pampenses</i>15
<i>Trichocereus chiloensis</i>25
<i>Echinopsis huottii</i>15
<i>Trichocereus pasacana</i>25
<i>Trichocereus terscheckii</i>25
<i>Myrtillocactus geometrizans</i>15
<i>Echinocactus ingens</i>10
<i>Cephalocereus dybowskii</i>25
<i>Euphorbia caput medusae</i>50
(4 years old)	
<i>Echinopsis ritteri</i>10
<i>Haageocereus chasacensis</i>25
<i>Neomammillaria elongata</i>15
<i>Pilocereus poco</i>25
<i>Echinocactus grusonii</i>10
<i>Cleistocactus strausii</i>25
<i>Pilocereus dawitzii</i>15
<i>Cephalocereus senilis</i>15
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Ants, Cacti, Beef

EDITOR'S NOTE: The following human interest notes were culled from Dr. Dodd's letters and were not prepared for publication. We feel that Journal readers should share these interesting comments.

In the November, 1936, JOURNAL, Dr. Poin-dexter translated an article of Backeberg's. He passed through Mendoza after a very long and tiresome journey from Chile. He must have taken a bad car because I go frequently over to Valparaiso, in the summer, 60 miles further than Santiago, and leaving my home at 6 in the morning, so as to get over the famous Quebrada del Toro in the early morning, we arrive comfortably at our destination by 6 in the afternoon. It is true that one hour is gained, because Argentine time is one in advance of Chilean time, but there is an hour for lunch at Portillo, half an hour at the Argentine customs house, getting out of the country and at least an hour at the Chilean customs, getting into Chile; we get to Santiago easily in 10 hours as compared to 27 taken by Backeberg. I am sorry he did not remain in Mendoza; call upon me or visit our Natural History Museum, where he would have been attended to by Drs. Carette and Ruiz, only too pleased to give him all the information he required on the cacti of the district.

My only excuse for writing the article in the March JOURNAL, is that I am an amateur fancier, stimulated by Doctor Houghton and his CACTUS BOOK. I make this statement publicly in the last part of the monograph. By the article you will see that I have a large collection of Lobivias. It is easy to explain why I had never seen the flowers. To get to the districts where they grow, it is necessary to go in winter, when they are not in bloom. In the north, provinces of Salta and Jujuy bordering with Bolivia, malaria is prevalent in summer when the Lobivias are in flower. No use risking malaria to see the flowers. Few people, if any, in these districts take interest in cacti, which are merely grouped together as weeds under the common name of Quisco, pronounced kees-ko. My Lobivias flowered for the first time in October, 1935.

According to the Director of our local Natural History Museum, Dr. Carette, this Lobivia was known to Pfeiffer as the *Echinocactus formosus*, published in B. & R. as *Echinopsis formosus*.

I have contacted Dr. Carlos Reed, who is the Director of the Santiago zoo in Chile. Dr. Reed, as you know, collaborated with Dr. Rose when he visited Mendoza in 1915. I explained in my

article, why men like Spegazzini, who knew this country well, Dr. Reed, Rose and his collaborators did not see this species; it is so outstanding that he could not help taking photos and describing it minutely had they seen it.

This has been a wonderful year for cactus flowers. My garden has been a profusion of blooms, a display of colour. The desert, as I have never seen it, millions and millions of flowers; the white large blooms of the *Trichocereus candicans* and *strigosus*; the dark yellow of the *Malacocarpus catamarcensis*, to be found by the thousands in the fields at the back of our local golf links, the *Opuntia sulfurea* with its bright yellow ones and the dark golden large one lying on the tiny prostrate stems of the *Pterocactus tuberosus*. The *Denmoza rhodacantha* gives inconspicuous flowers, but the reflexion of the afternoon sun on its red spines make a wonderful display. I have never seen the desert plants with such a display of flowers; the creosote bush, Jarilla; the wild broom and all the other shrubs on the desert that slopes from the city to the foot of the mountains, a distance of 20 miles in a sight well worth coming a long way to see. Of course it is not everybody who can appreciate desert scenery; much to their loss.

I recently returned from a summer vacation to Valparaiso, Chile, which is the world's greatest and most magnificent natural rock garden. The enormous *Trichocereus chilensis* on the mountains between Rio Blanco and the Coast Range are now covered with a parasitic growth, *Quintral de quisco* (keentrall day kiss-ko), a species of *Loranthus* (mistletoe). The small but numerous bright coral flowers give these cacti a remarkable appearance. Many people mistake these parasitic flowers for those of the cactus.

When I started collecting cacti, I saw large mounds of decomposed leaves, under bushes, and nearly always beside a large clump of *Trichocereus candicans*. I thought that these mounds were abandoned ant nests. I used to have much of this stuff transported to my garden, it made excellent compost for my plants. After my recent illness, I was ordered to take the baths at Vallavencio, about 30 miles from Mendoza, about 6 miles right in the big mountains. I went in the morning, returning in the evening. To make the journey more interesting, I entertained myself taking photos of some of the larger and more unique specimens of *Trichocereus*; showing how they grow under cover of

the cresote bush, not in the bright sunshine which is so strong in this part of the world. I studied these abandoned ant-nests and found that they were not nests at all. The ants live under ground, in wonderfully constructed nests; there are special workers that cut the flowers, especially that of the wild broom (retamo), a bright yellow; other workers carry the flowers that have been cut by the ant from the trees, to the nest; and strangest of all, other ants are busy taking previous years decomposed flowers OUT of the nest and depositing them somewhere in the vicinity—that is to say, that without any trouble, I have been getting splendid leaf mold. I have remained hours watching these insects at work; they are undoubtedly highly specialized. In this part of the country, the black ant that eats up rose bushes and other garden plants is unknown. We have the wood ants and a little red ant that enjoys making the nest under the finest cactus a fellow has. I have watched the wood ant at work and have seen a branch of a rose bush covered with scale bug, cleaned in an afternoon by an army of wood ants. I used to destroy them, now I leave them in peace, as long as they confine themselves to the out places and don't come near the house; I think that they live on all the pests that destroy the plants.

What a wonderful reception your President Roosevelt got in S. A. I do hope that some benefit will be derived. If you fellows bought our beef! We don't want to sell anything else, only beef, the finest and cheapest in the world, we could afford to buy more agricultural machinery, motor cars, cinema films, etc. We don't want to sell grain to the U. S. A. We are aware that charity begins at home and know that you produce enough for local consumption. We don't want to sell fruit, we know that California produces a surplus—we only want to sell BEEF. I found, during my stay in your country, that meat was the most expensive article of food; only certain privileged persons could eat it regularly. Why should this be so. The Argentine has spent millions of dollars to buy the very best cattle the world produces for breeding purposes; hundreds of thousands of pounds sterling are spent in Great Britain yearly on bulls to renovate our stock; our country, on account of the natural soft grasses is specially endowed by the Almighty for producing meat of the finest quality. I have visited some of the big ranches, Montana and Wyoming, very similar to ours, with Hereford herds, whilst we have Shorthorn

and within the last 10 years the Aberdeen Angus or black doddies; but your ranches only produce enough to cater to a small fraction of your immense population. To favor a few rich ranchers you deprive the whole of the underprivileged population from eating some article of food that is necessary for the maintainance of human life.

I wonder if barriers will eventually be broken down. We can't make machines, we don't have iron, nor coal, nor any of the other prime substances required. This country is a great grazing plain; we grow wheat, maize, linseed in quantities, but we sell these to Great Britain, France, Italy, etc. We don't pretend to sell to you; but we would certainly like to let you sample our beef. It is said in your country that our cattle is attacked with foot and mouth disease; this is not true; we neither have that, nor tuberculosis, nor any other cattle disease in the country.

With kind regards to Baxter and all other friends in your city.

I am, yours,

DR. LEONEL G. DODDS.

NINTH ANNUAL CACTUS AND SUCCULENT SHOW

Arrangements have been completed to hold our Ninth Annual Show on the grounds and as a part of the Los Angeles County Fair at Pomona, Sept. 17th to Oct. 3rd. A large space has been reserved for our use on the northeast side of the new Art Building, which is now under construction. This location is opposite the main exhibit building and in the center of all activities. The Art Building will provide shade for the protection of tender plants. As it is an out of door location, pots may be easily buried and landscapers will have free rein.

An innovation in our schedule is a classification for group exhibits by clubs and local societies. Amateurs will be permitted to use their plants in these group displays and still enter them individually under amateur classifications. One hundred and twenty-five dollars in cash prizes will be distributed amongst the principal entries in open, amateur and group classifications as well as the usual ribbons.

This is a splendid opportunity to bring our hobby to the attention of more than a half a million persons. The Show Committee representing the Society will be Howard E. Gates, Wm. Taylor Marshall and Wm. Surganty.

NOTE: Remove the next 8 pages and insert them after the June issue which completes Vol. VIII.



A sketch of Don Graham's work shop in Kansas.

GROWING CACTI IN KANSAS

I am enclosing a pen and ink sketch of a corner as you suggested. This sketch is from my own house and shows a part of my green-house, which is six feet below ground and entered from the basement. The entire construction below ground is in rock terraces, cemented permanently into place and refilled with rich loam into which the pots are placed. This makes a show-place along with a practical room for growing and raising.

The tools on the wall are all that are necessary for the average cactus grower, but many more can be easily added. Especially useful are the wooden tongs for holding spiny ones in planting. The other tools speak for themselves.

Soil compartments are very good as they keep soils, etc., off of the floor to a good advantage. Chemicals can be added to the various soils so as to exclude insects, etc.

Permanent labels can be easily made by cutting strips of galvanized sheet steel about three-eighths inch by six or seven inches long and pointed at one end. Label is written on by a solution of copper sulphate Cu SO_4 in water. This turns black and keep indefinitely.

The rest of the drawing speaks for itself, I believe. It is very compact for a small space.

I water my plants with a rubber hose connected inside to a warm water tap. The hose is a regulation air hose as used on automobiles to connect to the vacuum windshield wiper. A reducer is attached to the water tap and the hose inserted and fastened tightly. Thus I can regulate the temperature of the spray and by pinching the hose end can produce a steady flow of fine mist.

In potting my plants I try to vary the soil depth from the rim of the pot according to the amount of water needed for that individual plant. Each pot is watered once a week and some plants get plenty of water and others get none. Thus a *Ferocactus wislizeni* is planted soil flush with rim of pot and all water drains off as it does not need watering here in winter. I have an *Opuntia bahiensis* growing steadily so I give it a 3 inch depth in a twelve inch pot. Therefore I am having no losses due to watering and in any absence anyone can water for me.

My heating arrangement is from gas heat and very novel. Will send you sketches of it if you are interested. It is foolproof.

My *Nopalea dejecta* bloomed from December 25 until February and still is opening new buds. It's very beautiful.

Will some Society member please answer the following question?

Being a new member of the Society and an amateur in collecting cacti. I would like some information as to fertilizers and soils suitable for cacti. I notice a number of cacti dealers advertise fertilizers or soil conditioners; but do not know the best to use.

Being a druggist I know some about the ordinary fertilizers used on other plants, but not for cacti. Please give me some information regarding fertilizers or conditioner. If I had a formula I could prepare it myself. Hoping that some member can supply me with this information.



1a. *Pachyphytum viride* sp. nov.; flowering plant, app. x 0.5
 1b. *Pachyphytum viride* sp. nov.; flowers, app. x 1.

Pachyphytum viride, a new species

Pachyphytum viride spec. nov.; affine *P. bracteoso* in sectione generis *Eu-Pachyphyto*, sed differt: foliis subteretibus, viridissimis, haud glaucis.

By ERIC WALTHER, Botanist, Golden Gate Park

In submitting herewith this new species of *Pachyphytum* to our readers we wish to express our obligation and thanks to Mr. T. Hutchinson and Mr. and Mrs. Don B. Skinner for the kind submission of the material in question. The plants were originally imported from Mexico through Ferdinand Schmoll of Cadereyta, Queretaro, but nothing more definite is known of their natural habitat. It would be rash to assume this new species to be indigenous to Queretaro, since the firm mentioned has collectors active throughout Mexico. Pending further information it may reasonably be expected to have come from Central Mexico, the home of the other 8 previously known species. In the writer's key to these species, (*1) this new one would come into the group having large, appressed sepals comprising *Eu-Pachyphytum*, where its nearly terete leaves place it near *P. brevifolium* and *P. oviferum*, both of which differ in having their leaves shorter and broader, and distinctly glaucous.

*1 : : Genus *Pachyphytum*, Cactus Journal, 3:1:9-13, 1931.

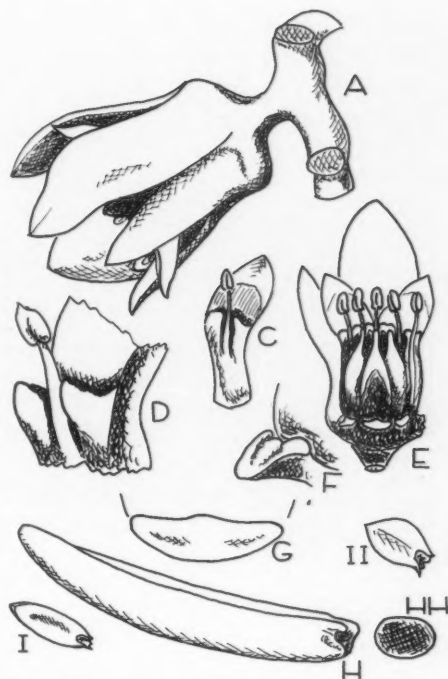
In its slender, straight, cylindrical leaves that attain a length of as much as 6 inches, always wholly green without any trace of glaucous color except when very young the present species is quite sufficiently distinct from all others known. Further details may be gathered from our description, drawing and photos. The plant pictured shows a bifid inflorescence, perhaps resulting from an injury to the growing point, and this is probably a simple receme in normal cases.

Pachyphytum viride sp. nov.:

Stem evident, short, 3 cm. tall or more, usually simple; leaves 12-15, laxly aggregated at top of caudex, widely spreading, subcylindrical, semiterete, slightly flattened above, obtusish, somewhat upcurved, at base abruptly contracted to the articulate base, 8-14 cm. long, 15-25 mm. broad, 10-15 mm. thick, color yellowish-oil green, to calla-green beneath, not at all glaucous; inflorescence lateral and axillary, commonly simply-racemose; peduncle ascending, slender, 10-17 cm. long, citron-yellow tinged congo-pink; lower bracts similar to leaves in color and shape, but smaller, 35 mm. long or less, elliptic-

- 2a. *Pachyphytum viride* sp. nov.; sideview of single flower after removal of bracts, etc., app. x 3.
 c. *Pachyphytum viride* sp. nov.; inside of single corolla-segment; app. x 3.
 d. *Pachyphytum viride* sp. nov.; characteristic appendages of petals, app. x 7.
 e. *Pachyphytum viride* sp. nov.; carpels, app. x 2.
 f.-g. *Pachyphytum viride* sp. nov.; nectary, app. x 7.
 h. *Pachyphytum viride* sp. nov.; leaf, lateral view, app. x 4.
 hh. *Pachyphytum viride* sp. nov.; leaf, cross-section, app. x 4.
 i. *Phyphytum viride* sp. nov.; lower bract, app. x 4.
 ii. *Pachyphytum viride* sp. nov.; upper bract, app. x 4.

oblong, somewhat broader, more flattened above; raceme secund, strongly nodding until after flowering, 9 cm. long or more, with app. 16 flowers; upper bracts very pale, corydalis-green tinged light-cinnamon-drab, broadly ovate, to 30 mm. long and 18 mm. broad, acutish, thin, faintly keeled on back, closely imbricate; pedicels short and stout, 2-3 mm. long; sepals erect, appressed to corolla, unequal, longest to 18 mm. long, exceeding corolla, thinnish, color at base nearly pure white, above as the upper bracts; corolla hidden within sepals; its segments 12 mm. long, spreading above middle, color outside rose-color, inside above spectrum-red with margins water-green, the two appendages conspicuous, spectrum-red; stamens 10, 11 mm. long, filaments spectrum-red above; carpels erect, 8 mm. long, seafoam-yellow; styles short, spectrum-red; nectaries obliquely-truncate, to 3 mm. wide, straw-yellow; follicles widely spread-



ing at maturity. Fls. VI-

Type: California Academy of Sciences No. 242615 (E. Walther 1937/-)



Echinofossulocactus zacatecasensis

One of the 2000 illustrations from the Britton and Rose reprint. If you have not reserved a set, you should do so at once. This reprint was made for you and everyone who really wants a set can arrange to obtain one. Just send a note stating that you are interested.



Euphorbia lactea (cemetery plant)
Euphorbia lactea (Marine Hospital plant)

Euphorbia lactea in Florida

By J. D. MITCHELL

It has been something over a year since the suggestion was made to Mr. Frick that our members might possibly like to know about how *Euphorbia lactea* grows in Florida, particularly in Key West. However, much as the writer likes

to tell about these things, it is sometimes difficult to find the time to do so. Many times I must admit the inclination is lacking, and that also accounts for the delay.

The photographs herewith tell more than can

be said in words. The larger of the two plants is in the fence corner of the cemetery plot allotted to the victims of the U. S. S. Maine disaster in Havana harbor during the Spanish-American war. These men were buried in this cemetery in Key West sometime during the year 1896, I believe, and as the people there take exceptionally good care of the entire large cemetery, which covers many acres, this *Euphorbia* plant was possibly set out in the corner about 42 years ago.

The other photograph shows a plant at the Marine Hospital in Key West, and this one is not so large as the plant in the U. S. S. Maine burial plot, but would make a nice dooryard specimen anywhere!

Look at these photographs, and then let me tell you that Mr. Frick has held back a photograph of another plant that is larger than these two. He has done this so that if any controversy comes up, he will have an ace in the hole. This won't prove to be the old fish story of "but you should have seen the other one"—the one that got away! The plant not shown is on the grounds of a large resort hotel in Key West, and although not quite so tall as the *Euphorbia* in the cemetery, it is much broader. The last time I looked at this plant I gathered that it must have sprung from at least a half dozen cuttings that were placed closely together. For the present, however, I think the two photographs herewith are enough for one eye-full.

There has been much conjecture as to how these *Euphorbias* found their way to Key West. Of course, they were brought here to Florida from the West Indies, coming originally from India. Some of the oldest inhabitants of Key West inform me that these "Dildoes" (everything that looks like an *Acanthocereus* is called "Dildoe") have been in Key West over 100 years. Many of them seem to know what they are talking about, because the juice is used by some as a remedy for healing cuts, and they lay great store by it. They claim when the first burning sensation is over, the cut heals more quickly. Personally, I don't think it much of a remedy, since the worst burns I have ever had have been caused just by contact with the juice. If a plant has some medicinal properties, the average person, especially the Negro, has its identity more in thought, because to him the plant has some virtue or property he finds good for his body. For this reason, I am inclined to believe these people when they say the *Euphorbia lactea* has been there over 100 years. It has certainly been in the West Indies longer than that, and verification of this can be found in a few old publica-

tions on the flora of parts of the West Indies.

What may sound like another fish story is the statement that the plants in the photographs are the offspring of a closely set group of plants covering nearly one-fourth of an acre. I wished to get a photograph of this group, but on returning to Key West last October after an absence of a number of years, I found that these plants had all been cut down, the cuttings shipped away to commercial nurseries in the central part of the state, and oil poured on the ground around the remaining stumps. The Works Progress Administration finished the job in their slum clearance program, for these plants were truly located in one of the worst sections of the city. Over ten acres in extent in this vicinity was cleared off of all growth, shacks and garbage dumps, and now looks as original as some of the wind-blown islets nearby. The plants in this group, being exposed to high winds from both oceans, never grew more than 10 or 12 feet in height, but the trunks, in laying over after each hurricane, grew upright again and made a prodigiously large planting. I will not tell you the height of the plant in the cemetery plot, but judge it for yourself. The shed in the right background is 8½ feet at the eaves.

This plant's being so closely set in the fence-corner makes it easily accessible for carving, but it has never shown but few scars where cuttings have been taken, although the branches hang well over the fence. What I mean by carving is just that. There are more than 100 sets of initials scratched on the stems, and dates as far back as 1915; there are dozens and dozens of double hearts with arrows through them, and initials on each. This plant is fine for this sentimental initial-cutting, as the scar stays indefinitely and is easily made.

Mr. Frick has asked about *Euphorbia neriiifolia* in Florida, and thinks that it should be found growing wild, from seeds brought over from Cuba by birds. I have covered literally every other square mile of the southern part of the peninsula, hammocks, lagoons, islands, keys, rock barrens, shell middens, etc., but have never seen *E. neriiifolia* growing wild. I think, since the seed is borne in a capsule, it has little or no attraction to birds such as is offered by a brightly colored cactus or other fruit. It is true that *E. neriiifolia* has been known from Cuba for many years, and is commonly used there as a hedge plant, as *E. lactea* is used. This fact is the explanation of why *E. lactea* is erroneously called *E. bavanensis*, a horticultural name.

Photos are by MRS. P. D. HOLLOWAY

Vagabonding in Lower California

By DR. ROBERT T. CRAIG

The northwestern section of Mexico can truthfully be called a "great unexplored botanical garden." The area comprises a vast territory of part of the states of Sonora, Chihuahua and Sinaloa and is largely mountainous. The roads in it are few and far between, and very poor, in fact seldom more than a wide trail; these are confined mostly to the lower country, thus leaving the higher sierras accessible only by trails that in many cases are difficult to follow and a reliable guide is very desirable, if not an actual necessity. A very great improvement and expansion has been made in road building by the Mexican Government in the last few years, but the area is so vast that all improvements have had to be confined to the regular overland routes. It is only by getting off from the beaten path and taking the time to climb the sierras and follow the arroyos that one is able to see the fascinating things of interest about the country, people and flora of this great garden.

The fact that these wild sierras have been greatly overlooked in the past has been due partly to the inaccessibility of the country and partly to the hostile nature of some of the natives. The Yaqui Indians who inhabit some of this country have not been very amiable to strangers and passage through their country has been somewhat hazardous. To discourage the Indian raiding parties and to protect the travelers, the Mexican army maintained a chain of forts located every few miles along the road and travelers were checked in at these forts and were allowed so much time between each army post. This did not give botanists any time to stop to examine or collect any material even if they had been so inclined. The present policies of the Mexican Government relieved much of the antagonism and many of these army posts have been discontinued and travel is more free and without as much danger as previously encountered. It is still wise to stay on the regular traveled routes and not wander around and dig in rock ledges since it gives the appearance of hunting for mineral and this is regarded as an assault on their superstition and might create their ill-will.

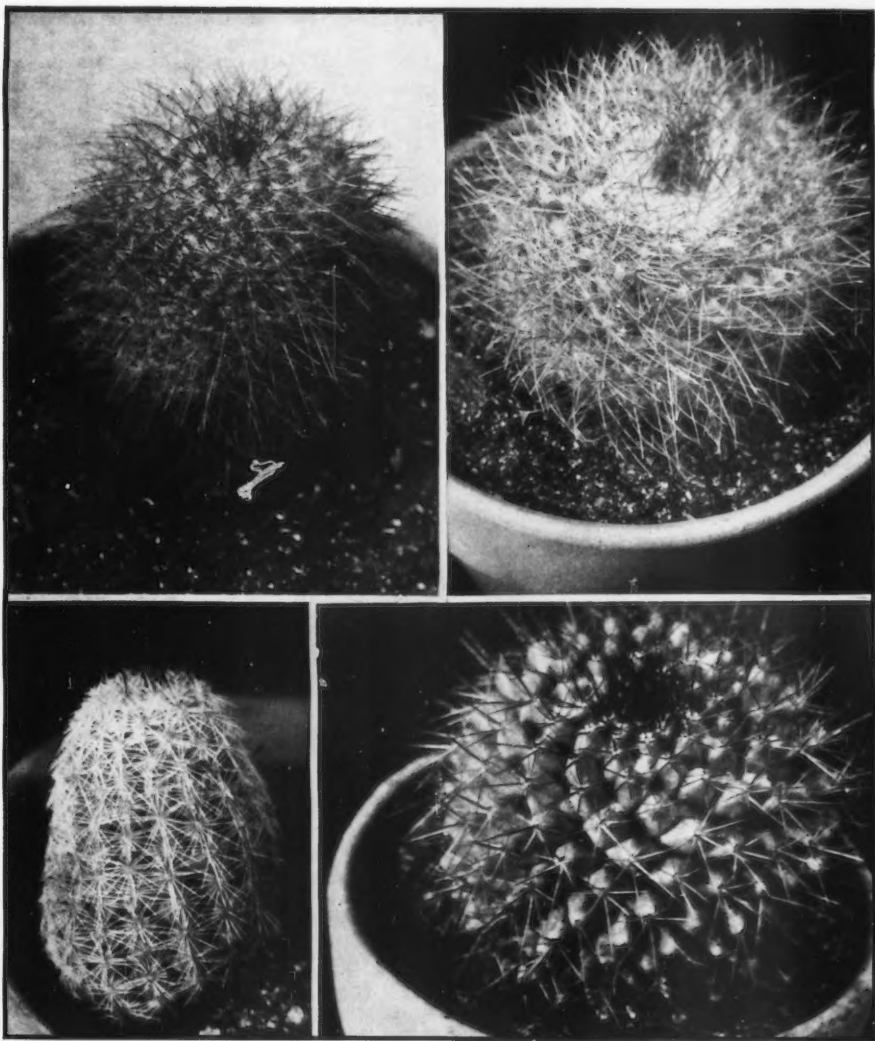
While returning from a recent trip into southeastern Sonora and southwestern Chihuahua, the author and his party had the pleasure of being lost one night while taking an ill advised short cut through the Baca Tete Mountains in the Yaqui Indian country far from the regular route.

No one suffered from any lead poisoning, but acquired what was nearly as unpleasant. About midnight the road became a network of roads or trails that branched and rebranched (only as Mexican roads can) with some of them returning to the original road again while others just faded out in the brush. After following one after another, they all seemed to lead in the wrong direction according to the compass. It appeared hopeless in the dark so a halt was called and a few hours of much needed sleep were obtained. Daylight cleared the situation as some passing soldiers directed the road to take.

During this trip into the great botanical garden, the author and his party visited parts of the country that had never been explored by "cactologists" heretofore. The results of this trip were very gratifying, not only from a very pleasant trip, but in the abundance of new material discovered. The main object of the trip was the collection of specimens for the study of the genus *Mammillaria* and this area certainly proved to be a marvelous locality for new material. From all indication and the reports of the natives, the border of the field was just touched and a great many more possibilities of new material lie in the sierras beyond, but there are also great difficulties in getting the material out as it would have to be packed on mule back for a great many miles. The trip was made possible by the cooperation of Sr. Salvadore Guerrero of the Department of Conservation of the Mexican Government and Sra. Helia Bravo H. of the National University of Mexico by allowing the author a permit to collect and export specimens for study.

As yet it is not possible to state the full extent of the discoveries, but a rough estimate is that the material will yield about twenty new species of *Mammillarias*. Final check will take some time as the flower, fruit and seed characteristics have not been recorded and checked.

Many of the plants are very striking in the brilliant coloration of the spines. From the Sierra Canelo of the Rio Mayo on the border between the states of Sonora and Chihuahua collected specimen No. 613 has long flexible spines which are yellowish-orange in the apex, becoming bright yellow. As a contrast from the same locality is No. 562 which has short stiff spines which are black, becoming dark purple. The spines of other plants have varying coloring



Interesting *Mammillarias* from Lower California. Collected by author.

UPPER LEFT: No. 510 Craig. A milky *Mammillaria*.

UPPER RIGHT: No. 613 Craig. Yellow and orange spined milky type.

LOWER LEFT: No. 625 Craig. Tubercles in vertical rows.

LOWER RIGHT: No. 562 Craig. Black spined *Mammillaria*.

Photos by author.

which ranges from white to yellow through oranges, browns, reds, purples, to black. Some of the single heads attain quite a size for this genus; one from Sierra Cajurichic measured six inches in diameter and over eight inches in height.

When No. 510 was found, it certainly was a surprise because it appeared to check with *Mammillaria ruesti* from Honduras which is hundreds of miles to the south. On closer examination the body of the plant checks in all details except that the tubercles contained a milky sap while *M. ruesti* contains a watery sap.

Another striking example of how man-made rules do not always apply in nature! A small *Mammillaria* No. 625, found near Batopilillas, Chihuahua, has tubercles arranged in vertical rows instead of spirals as given by most authorities in the description of this genus. At least it is believed to be a *Mammillaria* as it has all the body characteristics of such, but as the flower has not been observed as yet, it is still open for classification.

Although many *Mammillarias* were found, the genus *Coryphantha* was very conspicuous by its absence. With the exception of *Coryphantha recurvata* and *C. aggregata*, which are found around Nogales in the north, no other evidence of any were found farther south in Sonora nor in southwestern Chihuahua.

In traversing the state of Sonora from Nogales south, it was quite noticeable the change in the characteristics of certain well known species. The *Lophocereus schottii* near the border were thick (up to six inches in diameter), not very tall (about six feet) and more or less rigid. As one progressed farther south they became smaller in diameter and taller. In Yaqui River Valley, specimens were collected that were nearly twenty feet high and less than two inches in diameter and quite limber. The two specimens placed side by side appear very different, but by observing the gradual change that had been taking place over a distance of several hundred miles, it bears out that they are all the same species with only the geographical variations. A similar change takes place with the *Lemaireocereus thurberi* which in the north shows no definite trunk, but farther south the branches of the plant are given off slightly higher up, thus making more or less of a trunk. One of the characteristics of this species is that the branches are given off close to the ground, but again one finds these gradual changes in characteristics over a distance of several hundred miles.

The milky *Mammillarias* in the southern part

of Sonora and Chihuahua are usually different in habitat from their northern brothers, in that they are nearly always found on rocky cliff sides and not on the grassy slopes as the northern species are usually found. One specimen of these cliff-dwellers which is usually globose was found hanging pendulous about three feet down from a rocky ledge, but the end was still globose with the apex turned upward still attempting to maintain its identity even though it had fallen over the cliff and was only hanging on by its "toes."

In collecting specimens in the field it is very difficult to determine just where the dividing line between species is, as there often appears the different stages of evolution or series of slight variations. The two extremes of the series are quite different, but the intermediary steps are very slight.

The great unexplored garden of northwestern Mexico, particularly in the sierras and their arroyos offer vast opportunity for study. Many interesting discoveries are assured the adventurer who is willing to brave a few hardships and penetrate these unexplored wilds.

EDITOR'S NOTE: Dr. Craig has one of the largest collections of *Mammillarias* in the United States and will be glad to contact those who are also interested in this genus or have new material that should be checked and recorded.

FROM A WASHINGTON PAPER

CACTUS, SUCCULENT SOCIETY IS BEING ORGANIZED HERE

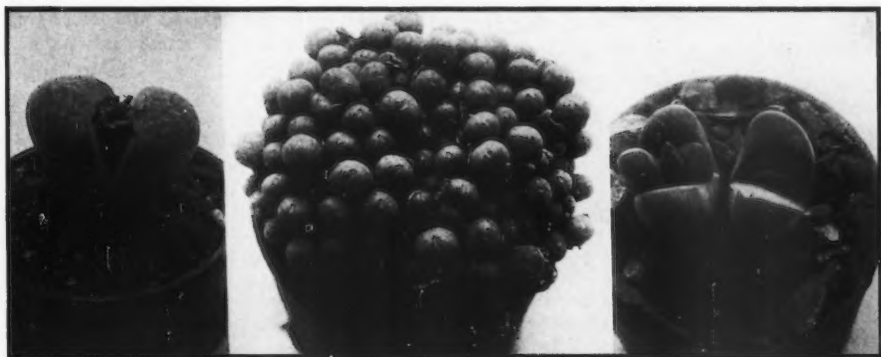
May 1, 1937.

Mr. A. S. Harmer, of Dieringer, Washington, who has his private collection of 2,500 cactus and succulents on display at the Puget Sound Power and Light Co's Store on Main St., wishes to announce that all who are interested in the growing of cactus and succulents who would like to join The Cactus and Succulent Club now being organized to see him at the above address.

Mr. Harmer says these are the most interesting plants in the world to grow, and his success with them is due to the information found in the Cactus and Succulent Journal.

Those who visited this exhibition noted the healthy condition of these plants and not a mealy bug, scale or red spider can be seen. The plants in this collection were all grown in electrically sterilized soil. This is a private collection and no plants are on sale.

EDITOR'S NOTE: A subsequent JOURNAL will contain statements from your Editor and well known botanists regarding the JOURNAL policy, adopted eight years ago, of using small letters for specific names. In the meantime this policy will remain unchanged.

*Lithops marmorata* N. E. Br.*Conophytum batesii* N. E. Br.*Lithops rubra* N. E. Br.

NOTES FROM ENGLAND

Being a member of the Cactus Society of America almost from the commencement of same, I have all the numbers of the JOURNAL and value them very much, also the fact that it was the late Dr. N. E. Brown who proposed that I should join your Society.

I am very pleased to say that I have a piece of almost all his type plants of *Lithops* and *Conophytums* that he named and published in the GARDENER'S CHRON. and our Society Journal. I have also a good many that he named, but the names have not been published yet. Kew Gardens has the whole of his M.S.S. so no doubt it will be published at some future date. It was by his special request that I received the above type plants from Kew, after his decease, but I had the pleasure of receiving a great many from him before, as I exchanged with him since 1922, and always took my plants when in flower to him, so he could figure same, for his great work on *Mesembryanthemums*, of which the coloured plates were wonderful. I hope Kew will find time to publish same as it would undoubtedly be the finest and most complete work.

I have inclosed a photo of the type plant of *Conophytum batesii* N. E. Br., which Dr. Brown named after me, also the type plant of *Lithops marmorata* N. E. Br., from his own plant, and a photo of *Lithops rubra* N. E. Br., the last was sent to me by Dr. A. Fischer from his type plant, (one head) which has now increased to four heads. The *L. marmorata* has also increased to three heads, none of the photos have been published. If you care to publish same in the

JOURNAL, you can do so. They were taken from collection in 1931.

Will now close, wishing the Society every success. I remain yours sincerely,

J. T. BATES, England.

NOTES FROM THE MILWAUKEE CLUB

Mr. Harry Barwick was elected President, Prof. Alfonso Hume, Vice-President, and Pat White, Secretary-Treasurer. By popular vote these three officers were appointed the controlling executive board.

An interesting program is being arranged for the next meeting. Prof. Hume will give a talk on nomenclature and classification illustrated with stereoptican slides. There will be a short soil talk and reading of bulletins. A definite plan of co-operation with the University of Wis. Dept. of Agriculture will be outlined. A bound catalogue of Manila envelopes containing plant and seed lists and catalogues from all parts of the world will be presented to our lending library. We have been tendered the use of the big camera and slide making equipment at Marquette High School, thanks to Prof. Heun, who teaches biology at Marquette.

We have so many good collections in Milwaukee and nearby that we were really startled when we started to look around.

PAT WHITE.

TEXTBOOK OF SYSTEMATIC BOTANY by Swingle. This book is highly recommended for the student who feels the need of botanical information. Written for the student, Dr. Swingle, who is a member of the Nomenclature Committee, has made possible this vast source of information. Some of the chapters are: Evolution, Classification, Developments of Systems, Nomenclature, Preparation of Herbaria, Terminology, and a most readable description of Plant Families. Send \$2.50 to CACTUS SOCIETY, Box 101, Pasadena, Calif.

THE TRIBULATIONS OF AN INDIANA COLLECTOR

By ARTHUR E. ADLER

There have been so many articles and letters written about amateurs beginning a cactus collection—about their sad experiences and final results. So, since I am a new member of THE CACTUS AND SUCCULENT SOCIETY, I am adding mine to the list thinking perhaps you may be interested.

Cacti have interested me since I was a child when I saw some colored plates of them. About ten years ago I purchased some seeds of a cactus labeled "Cactus Pitajaya." Today that seems a rather vague name. I planted them in shallow boxes in very sandy soil and scattered small gravel over the surface of the soil. In about a month the seedlings appeared between the gravel and by fall I had dozens of plants scarcely one half inch tall. I kept them in the house through the winter and in spring I transplanted them, saving only the best ones. I kept them for several years. They grew slowly and I became discouraged and gave them all away.

For several years I forgot about cacti. Then one day I saw some cacti in clay pots in a "5 & 10" store. I bought one for ten cents, took it home and planted it in another pot in sandy soil, where it grew and thrived. That was four years ago. Last summer I was rewarded with several beautiful flowers of golden yellow with a red throat. I believe it is *Hamatocactus setispinus*.

Meanwhile, one day I happened onto a greenhouse, a desolate, ramshackle place in the country owned by an old man, a typical hermit. In his youth he had been a student of theology and horticulture in Germany. He invited me into his greenhouse which was as ramshackle inside as out. It did, however, contain some very fine plants, among them several hundred cactus seedlings. When he saw I was interested in them he told me all he knew of cacti and their care. I bought about a dozen plants and went home determined to start a real collection.

I visited all the florists in town and discovered most of them had recently obtained collections of cacti gathered from the deserts. They were a rootless, wilted and all together sad looking lot. Most of the florists insisted that these plants would neither grow nor bloom except in the desert where they grew naturally. Their idea was that cacti were to be planted in clay in ornamental pots where they would exist as ornaments for perhaps as long as a year when they were to be discarded and new ones purchased.

This was disappointing news to me, but I purchased a few of the best looking ones, several *Opuntias*, *Echinocerei* and *Coryphanthas*.

This was in early spring. Late in April I moved them to the garden. They all began to grow, several forming buds. That year we had a long rainy spell that lasted from early May until late in June. Before it was over all the plants except a few of the seedlings and the *Coryphanthas* had rotted. I gathered a few firm pads from the *Opuntias*, picked out the plants that were still alive and removed them to a place where they were protected from the rain to begin again.

A bit wiser for the experience I set out to buy some new plants. One day I noticed an add in a magazine of a cactus nursery in California. I sent for a list and by September I had received my first order. That was in September, 1935. In February, 1936, I ordered more. Meanwhile I had been to the libraries and read all I could find on the subject. In March of that year I had about seventy-five plants of about fifty species of both North and South American Cacti. I have whenever possible purchased blooming size plants. Naturally I looked forward to a summer of success. I wintered the plants indoors in a window six feet wide. The temperature in the room was seldom more than 65°F. They were all in porous pots setting in saucers. In the winter I gave each plant a little water in its saucer every ten days.

By the first of April some of the plants were showing signs of new growth. I moved them to the garden, placing them under the eaves of the house where they were protected from the rain. Several days later when the sun was bright and the air warm I gave them a good watering. That night it turned cold. I covered them with papers and boards and regretted having watered them. The next morning the temperature in the garden was 28°F. Although I knew it would be a few degrees warmer where they were placed, still it would probably be below freezing. So with a lump in my throat I went to work that morning deciding that I may as well give up. I didn't have the heart to look at them for several days.

When I did uncover them on a warm day I was delightfully surprised to find them looking as fine and healthy as ever. With renewed hope I built a cold frame to keep them in until June. After several weeks in this cold frame all began to make new growth and several of them sent up buds. By the first of June the pots were set in the ground in an especially prepared sandy

soil. I placed a 2 inch pot beneath the drain of each pot to assure drainage. Throughout the summer I had an abundance of blossoms—Echinopsis, Echinocerei, Coryphanthas, Mammillarias, Opuntias and Rebutias.

In September I placed them back in the cold frame where they remained until the middle of November. They were then taken into the house for the winter.

As I write this now in early April they are out doors again in the cold frame. I have a frostproof cover ready for very frosty nights. There are buds on most of the Echinocerei and the Rebutias. Also the buds formed last fall on the Echinopsis are beginning to swell. All the plants are making new growth except several Echinocacti that I have. In the March issue of the CACTUS AND SUCCULENT JOURNAL I noted with great interest the results of observations on the hardiness of cacti in California during the freeze this past winter.

It may be of interest to you to know that last summer I gave a friend a group of odds and ends of Cacti, mostly seedlings several years old, several unidentified plants and a young *Homalocephala texensis*. Last fall when ordering some plants for myself I also ordered a *Rebutia minuscula* for her. In January she was forced to leave her home because of the flood. The water was several inches deep in the first floor of her home. Although the plants were not submerged the house was wet and unheated for nearly a month with temperatures as low as 10°F. for several days. The *Rebutia* and the *Homalocephala texensis* were unharmed while the others were killed. Today the *Rebutia* is in bloom. In my opinion this is certainly a boost for a charming plant that has just about all the desirable qualities for a pot plant.

It is so difficult to limit a collection to a certain number of plants, but when space to keep them in winter is limited there seems to be nothing else to do. I have nearly a hundred Cacti and several dozen succulents including some Echeverias, Haworthias, Crassulas, Aloes, Sedums and Agaves. I hardly know where I'll find room for more, but I'm ordering a few more this spring. Somehow I know I'll find room somewhere for them and though I may have continued success or failure I'll continue to grow them. For I am one of those persons (fools if you prefer) who would go without a good meal and spend the price of it on a new or rare cactus.

CACTI IN TEXAS

Sul Ross Texas State Teachers' College at Alpine, Texas, is one of the leaders in creating Cactus Gardens.

Mr. J. B. Ely, a landscape architect, and well known cactus expert is now engaged in planting what is believed will be the most extensive desert garden in the United States. Over 4000 square feet was planted last year and work is still in rapid progress. Alpine, Texas, is in the famous Davis Mountains and in the center of what is undoubtedly the greatest cactus and desert plant area in the world.

It is intended that the Sul Ross College Gardens shall eventually include every species of cactus and desert plant that grows in this great Rio Grande Valley section, which extends from Arizona to Brownsville, Texas, at the mouth of the Rio Grande River. A greenhouse is to be included to house an extensive planting of tropical cacti. Dr. W. H. Morelock, President of the College, possesses a true appreciation of the great importance of cactus in nature's world of wonder and beauty. He has indicated to Mr. Ely that he plans a three year program of campus beautification for the college.

Not only are the Davis Mountains notable for Desert Flora, but they are unexcelled the world over for rare and beautiful rock and fossil specimens. These have already been built into the college buildings. The stones used even in the students' cottages and the great wall enclosing the campus are in rarity and beauty of color unexcelled. These colors run from jet black through all the oxide colors to snow white. Mr. Ely is making use of these colors in decorating the cactus beds and in harmonizing and contrasting with the colors of the various species of cacti.

Incidentally, as a proof of recognition of the unparalleled natural beauty of this great "Southwest Desert" the Mexican and United States governments have perfected an international treaty setting aside a vast area on both sides of the Rio Grande, known as the "Big Bend" country, an international park to be known as "The Last Frontier." International boundary lines have been set back so that tourists may now cross to foreign territory without the bother of the usual border inspections and regulations. Work is now under way building highways, mountain and scenic drives, bridges, etc. When completed "The Last Frontier" International Park will open to the world a vast area of scenic wonder and beauty unparalleled on the globe.

J. B. ELY.

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